UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/834,658	04/16/2001	Sofia Yeung	50277-1010	3688

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EXAMINER
FLEURANTIN, JEAN B

ART UNIT	PAPER NUMBER
2172	

DATE MAILED: 02/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/834,658	YEUNG ET AL.
	Examiner	Art Unit
	Jean B Fleurantin	2172

-- The MAILING DATE of this communication appears n the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>30 December 2003 RCE</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>39-53,55 and 58</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>39-53,55 and 58</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is

eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)

has been timely paid, the finality of the previous Office action has been withdrawn pursuant to

37 CFR 1.114. Applicant's submission filed on 28 November 2003, and 30 December 2003, has

been entered. Claims 39-53, 55 and 58 remain pending for examination.

Response to Applicant' Remarks

2.   Applicant's arguments filed on 28 November 2003 with respect to claims 39-53, 55 and

58 are fully considered but, have been found persuasive only to the extent that the prior art of

record does not specifically teach the limitations "wherein the dump file includes statements in a

data description language (DDL) describing how to recreate the data contained in said each of

the selected partitions on the table." However, Kingberg teaches such limitations.

       Although the claims are interpreted in light of the specification, the limitations from the

specification are not read into the claims. See In re Van Genus, 988 F.D 1181, 26 USPQ2d 1057

(Fed. Cir. 1993).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 39-53, 55 and 58 rejected under 35 U.S.C. 103(a) as being unpatentable over US

Patent Number 5,551,027 issued to Choy et al. ("hereinafter Choy") in view of US Patent

Number 5,734,887 issued to Kingberg et al. ("hereinafter Kingberg").

As per claim 39, Choy discloses, "a method of exporting data from a table into a dump

file" as each partition may be packaged as a separate data module that contains its own access

methods, such a self-contained data module may be used as a transportable database unit;

similarly to the description provided by the specification on page 1, lines 9-13, (see col. 12, lines

42-47), "said table being subdivided into number of partitions" as a database table is partitioned

according to the content of its records, (see col. 7, lines 12-15), said method comprising the steps

of:

"selecting a fewer number of partitions of the table, than the number of partitions of the

table" as the selection predicates that were applied to the global indexes must be rechecked later,

i.e., when the records retrieved from the fast path must be re-certified using the original search

predicates, like other database objects the coarse global index table can itself be partitioned if

necessary, (see col. 9, lines 20-25). Further, in column 11, lines 24-29, Coy discloses if there is a

selection predicate on the partition key that can be evaluated into partition identifiers then

evaluate that predicate, if there is an applicable and selective coarse global index available then

obtain the qualified partition identifiers from that coarse global index, sort the partition

identifiers, remove the duplicates and merge with the partition identifiers based on partition key;

and

"for each of the selected partitions of the table, storing in the dump file data contained in

said each of the selected partitions" as each partition may be packaged as a separate data module

that contains its own access methods, such a self-contained data module may be used as a

transportable database unit, for instance on a massively distributed database system, (see col. 12,

lines 44-47), "wherein data contained in a partition of the table, that is not selected is not stored

in the dump file" as the partition identifier list becomes too long, it is no longer selective, the

database management system may stop using the global index and release S-Locks if any are

held and proceed to broadcast the query instead, if the query is not partition selective, then let the

partition identifier be logically the list of all partitions send the query to each identified partition

for evaluation, (see col. 11, lines 32-35). Choy does not explicitly disclose wherein the dump

file includes statements in a data description language (DDL) describing how to recreate the data

contained in said each of the selected partitions on the table. However, Kingberg discloses the

logical data model is used to generate a physical data representation from which a database

description may be produced via standard database description language, the physical database is

created and logical tables are divided into multiple physical tables, (see col. 18, line 35 to col. 19,

line 22). It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to modify the teachings of Choy with Kingberg, thereby wherein the dump

file includes statements in a data description language (DDL) describing how to recreate the data contained in said each of the selected partitions on the table. Such modification would allow the teachings of Choy and Kingberg to improve the accuracy of the import/export and repartitioning of partitioned objects, and to provide making changes to the physical structure of database tables without requiring changes to applications using tables; and a level of integration for multiple applications to share common data, (see cols. 3 and 30, lines 3-5, and 29-30).

As per claims 40 and 48, Choy discloses, "wherein the fewer number of partitions is exactly one" as one or more partitions of a table may be stored in a single site, (see col. 2, lines 5-6), and column 8, lines 65-67.

As per claim 41, in addition to claim 39, Choy discloses, "a computer readable medium bearing instructions arranged, upon execution, to cause one or more processors to perform" as horizontally partitioning a database object are to partition data among multiple nodes or processors within a single database management system so as to facilitate parallel processing of a database management system query, (see col. 7, lines 21-24).

As per claim 42, in addition to claim 40, Choy discloses, "a computer readable medium bearing instructions arranged, upon execution, to cause one or more processors to perform" as horizontally partitioning a database object are to partition data among multiple nodes or processors within a single database management system so as to facilitate parallel processing of a database management system query, (see col. 7, lines 21-24).

As per claim 43, Choy discloses, "a method of importing data from a dump file into a relational database table" as each partition may be packaged as a separate data module that contains its own access methods, such a self-contained data module may be used as a transportable database unit, (see col. 12, lines 42-47), said method comprising the steps of:

"retrieving from the dump file data contained in selected partitions of a first relational database table" as data retrieval a non unique global index is used primarily for target partition selection, the local results obtained from these target partitions are then merged to form the actual result, (see col. 11, lines 55-58), "wherein the selected partitions are a subset of a total number of partitions of the first relational database table" as a table managed by a relational database management system may be horizontally partitioned such that each record of the object is stored in one of the many partitions of the object, each partition of the object is typically associated with a group of physically storage that is disjoint from those of the other partitions, (see col. 7, lines 12-19); and

"importing the data contained in selected partitions into corresponding partitions of a second relational database table" as the selection predicates that were applied to the global indexes must be rechecked later, i.e., when the records retrieved from the fast path must be recertified using the original search predicates, like other database objects, the coarse global index table can itself be partitioned if necessary, (see col. 9, lines 20-25), "wherein the corresponding partitions are a subset of a total number of partitions of the second relational database table" as the method involves creating a local index table for each partition of the database and creating a coarse global index table containing one unique global index entry for

each distinct local index key value in each local index table, the local index table contains one local index entry for each object of interest in the corresponding partition of the table, each local index entry consists of an object identifier such as a record pointer, (see col. 8, lines 44-52). Choy does not explicitly disclose wherein the dump file includes statements in a data description language (DDL) describing how to recreate the data contained in said each of the selected partitions on the table. However, Kingberg discloses the logical data model is used to generate a physical data representation from which a database description may be produced via standard database description language, the physical database is created and logical tables are divided into multiple physical tables, (see col. 18, line 35 to col. 19, line 22). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the teachings of Choy with Kingberg, thereby wherein the dump file includes statements in a data description language (DDL) describing how to recreate the data contained in said each of the selected partitions on the table. Such modification would allow the teachings of Choy and Kingberg to improve the accuracy of the import/export and repartitioning of partitioned objects, and to provide making changes to the physical structure of database tables without requiring changes to applications using tables; and a level of integration for multiple applications to share common data, (see cols. 3 and 30, lines 3-5, and 29-30).

As per claims 44 and 52, Choy discloses, "wherein the subset of the total number of partitions is exactly one" as one or more partitions of a table may be stored in a single site, (see col. 2, lines 5-6).

As per claims 45 and 53, Choy discloses, "a computer readable medium bearing

instructions arranged, upon execution, to cause one or more processors to perform" as

horizontally partitioning a database object are to partition data among multiple nodes or

processors within a single database management system so as to facilitate parallel processing of a

database management system query, (see col. 7, lines 21-24).

As per claim 46, Choy discloses, "a method of exporting data from a database object into

a dump file" as each partition may be packaged as a separate data module that contains its own

access methods, such a self-contained data module may be used as a transportable database unit;

similarly to the description provided by the specification on page 1, lines 9-13, (see col. 12, lines

42-47), said method comprising the steps of:

"subdivided the database object into number of partitions" as a table managed by a

relational database management system may be horizontally partitioned such that each record of

the object is stored in one of the many partitions of the object, (see col. 7, lines 12-15);

"selecting a fewer number of partitions than the number of partitions" as the selection

predicates that were applied to the global indexes must be rechecked later, when the records

retrieved from the fast path must be re-certified using the original search predicates, like other

database objects the coarse global index table can itself be partitioned if necessary, (see col. 9,

lines 20-25). Further, in column 11, lines 24-29, Coy discloses if there is a selection predicate on

the partition key that can be evaluated into the partition identifiers then evaluate that predicate, if

there is an applicable and selective coarse global index available, then obtain the qualified

partition identifiers from that coarse global index, sort the partition identifiers, remove the

duplicates and merge with the partition identifiers based on partition key, if they exist; and

"for each of the selected partitions, storing in the dump file data contained in said each of

the selected partitions" as each partition may be packaged as a separate data module that contains

its own access methods, such a self-contained data module may be used as a transportable

database unit, for instance on a massively distributed database system; similarly to the

description provided by the specification on page 1, lines 9-13, (see col. 12, lines 43-47),

"wherein data contained in a partition that is not selected is not stored in the dump file" as the

partition identifier list becomes too long, i.e., it is no longer selective, the database management

system may stop using the global index and release S-Locks if any are held and proceed to

broadcast the query instead, if the query is not partition selective, then let the partition identifier

be logically the list of all partitions, send the query to each identified partition for evaluation,

(see col. 11, lines 32-35). Choy does not explicitly disclose wherein the dump file includes

statements in a data description language (DDL) describing how to recreate the data contained in

said each of the selected partitions on the table. However, Kingberg discloses the logical data

model is used to generate a physical data representation from which a database description may

be produced via standard database description language, the physical database is created and

logical tables are divided into multiple physical tables, (see col. 18, line 35 to col. 19, line 22). It

would have been obvious to a person of ordinary skill in the art at the time the invention was

made to modify the teachings of Choy with Kingberg, thereby wherein the dump file includes

statements in a data description language (DDL) describing how to recreate the data contained in

said each of the selected partitions on the table. Such modification would allow the teachings of

Choy and Kingberg to improve the accuracy of the import/export and repartitioning of

partitioned objects, and to provide making changes to the physical structure of database tables

without requiring changes to applications using tables; and a level of integration for multiple

applications to share common data, (see cols. 3 and 30, lines 3-5, and 29-30).

As per claims 47 and 51, Choy discloses, "wherein the database object includes one of a

relational database table, a database data container, and object oriented database object class",

(see col. 7, lines 10-20).

As per claim 49, the limitations of claim 49 are rejected in the analysis of claim 45, and

this claim is rejected on that basis.

As per claim 50, Choy discloses, "a method of importing data from a dump file into a

database object" as each partition may be packaged as a separate data module that contains its

own access methods, such a self-contained data module may be used as a transportable database

unit; similarly to the description provided by the specification on page 1, lines 9-13, (see col. 12,

lines 42-47), said method comprising the steps of:

"retrieving from the dump file data contained in selected partitions of a first database

object" as for data retrieval a non unique global index is used primarily for target partition

selection, the local results obtained from these target partitions are then merged to form the

actual result, (see col. 11, lines 55-58), "wherein the selected partitions are a subset of a total

number of partitions of the first database object" as a table managed by a relational database

management system may be horizontally partitioned such that each record of the object is stored

in one of the many partitions of the object, each partition of the object is typically associated

with a group of physically storage that is disjoint from those of the other partitions, (see col. 7,

lines 12-19); and

"importing the data contained in selected partitions into corresponding partitions of a

second database object" as the selection predicates that were applied to the global indexes must

be rechecked later, when the records retrieved from the fast path must be recertified using the

original search predicates, like other database objects the coarse global index table can itself be

partitioned if necessary, (see col. 9, lines 20-25), "wherein the corresponding partitions are a

subset of a total number of partitions of the second database object" as the method involves

creating a local index table for each partition of the database and creating a coarse global index

table containing one unique global index entry for each distinct local index key value in each

local index table, the local index table contains one local index entry for each object of interest in

the corresponding partition of the table, each local index entry consists of an object identifier

such as a record pointer, (see col. 8, lines 44-52). Choy does not explicitly disclose wherein the

dump file includes statements in a data description language (DDL) describing how to recreate

the data contained in said each of the selected partitions on the table. However, Kingberg

discloses the logical data model is used to generate a physical data representation from which a

database description may be produced via standard database description language, the physical

database is created and logical tables are divided into multiple physical tables, (see col. 18, line

35 to col. 19, line 22). It would have been obvious to a person of ordinary skill in the art at the

time the invention was made to modify the teachings of Choy with Kingberg, thereby wherein

the dump file includes statements in a data description language (DDL) describing how to

recreate the data contained in said each of the selected partitions on the table. Such modification

would allow the teachings of Choy and Kingberg to improve the accuracy of the import/export

and repartitioning of partitioned objects, and to provide making changes to the physical structure

of database tables without requiring changes to applications using tables; and a level of

integration for multiple applications to share common data, (see cols. 3 and 30, lines 3-5, and 29-

30).

As per claims 55 and 58, Choy discloses a method, "wherein the storing includes

exporting the data contained in each of the selected partitions of the table into the dump file" as

each partition may be packaged as a separate data module that contains its own access methods,

such a self-contained data module may be used as a transportable database unit; similarly to the

description provided by the specification on page 1, lines 9-13, (see col. 12, lines 42-47).

Prior Art

4.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure: Bridge, Jr. et al. US Patent Number 5,873,102 relates to computer systems.

Contact Information

5.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jean B Fleurantin whose telephone number is 703-308-6718.

The examiner can normally be reached on 7:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, BREENE JOHN E can be reached on 703-305-9790. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703-305-3900.

Jean Bolte Fleurantin

February 21, 2004

SHAHID ALAM
PRIMARY EXAMINER